

REMARKS/ARGUMENTS

Claims 1-17 are cancelled, and Claims 18-30 are newly added. This amendment is supported by the originally filed specification, and thus no new matter is added. Applicants respectfully request reconsideration in light of the following remarks.

Summary of the Invention

The following paragraphs provide a brief description of the invention excerpted from portions of the detailed description in the specification. It is noted that this brief description is being provided with the intention to facilitate the Examiner's understanding of an implementation corresponding to the claimed invention, and should not be construed or used in any way to limit the claimed invention that is specified solely by the presented claims.

According to one aspect of the present invention, a fault-tolerant system for in-circuit programming (ICP) is disclosed as illustrated in Fig. 8. In this illustrated implementation, a mini-boot code (207) provides an alternative set of system initialization instructions (or program), which cannot be accidentally modified. Whenever the system and the normal boot program (202) have been corrupted, the mini-boot code (207) springs into action. (See paragraph [0050].)

The corruption causes MUX (210) to direct jump boot vector (216) into CPU (212), and the mini-boot code (207), instead of the boot

program (202), then takes care of necessary system initialization to boot the CPU (212). (See paragraph [0054].)

Subsequently, the mini-boot code (207) utilizes a built-in configuration load program, which is designed to access a configuration data for the programmable logic array (PLA), to acquire configuration data from an internal or external location. (See paragraph [0055].)

Accordingly, the fault-tolerant mechanism is established, during system corruption, not only to initialize (or boot) the system but also to load configuration data for the programmable logic array (PLA).

Rejections of Claims 1-17

Claims 1-3, 5-7, 12-15 and 17 are rejected under 35 USC 102(e) as being anticipated by Ikeda (USPN 2003/0184339). Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Ikeda in view of Hsu (USPN 5,359,570). Claims 8 and 9 are rejected under 35 USC 103(a) as being unpatentable over Ikeda in view of Sun (USPN 6,401,221). Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Ikeda in view of Sun (USPN 5,901,330) ("Sun2"). Claim 11 is rejected under 35 USC 103(a) as being unpatentable over Ikeda in view of Lawman (USPN 6,028,445). Claim 16 is rejected under 35 USC 103(a) as being unpatentable over Ikeda in view of Akao (USPN 5,900,008).

As Claims 1-17 are now cancelled, the above rejections have become moot.

Patentability of Claims 18-30

New Claims 18-30 are patentable over the cited prior art based primarily on the reason that no cited prior art reference, including Ikeda, Hsu, Sun, Sun2, Lawman and Akao, taken separately or together with any other reference, discloses or suggests a fault-tolerant system wherein, for example, “the mini-boot code comprises a configuration load program designed to access a configuration data from a default location” as now recited, for example, in independent Claim 18.

Specifically speaking, according to one aspect of the present application, the claimed invention is directed to a fault-tolerance system and method adapted, for example, to an in-circuit programamble (ICP) configurable logic array (CLA). The fault-tolerant system/method includes, among other things, a mini-boot code. The claimed mini-boot code is stored in a protected memory region, and is executed when there is an error during an in-circuit program process. Moreover, the claimed mini-boot code “comprises a configuration load program designed to access a configuration data from a default location.” In other words, a function of the claimed mini-boot code can be articulated, according to an aspect of the invention, as being twofold: initializing the system when there is an error during an in-circuit program process, and loading configuration data after/before the system is initialized.

With respect to the cited prior art, including Ikeda, Hsu, Sun, Sun2, Lawman and Akao, not a single one of these, except perhaps or arguably Sun, would appear to even vaguely disclose a mini-boot code or similar code/program that has a function similar to the claimed mini-boot code.

Regarding the cited prior art of Sun, it was assigned to the assignee of the present application at the time the claimed invention was made, and it also shares a common inventor (Albert Sun). Even to the extent that Sun may be argued to be directed to a fault-tolerance architecture for in-circuit programming and to disclose a mini-boot code, Sun's mini-boot code, however, still cannot be said to comprise "a configuration load program designed to access a configuration data" as currently claimed. Specifically, Sun's mini-boot code would appear to initialize the system when there is an error during an in-circuit program process (which may be likened to the first part of the claimed mini-boot code function), but Sun's mini-boot code would appear to end its role there. No more function or activity could be found in Sun's mini-boot code. The absence of, for example, "a configuration load program designed to access a configuration data" (i.e., corresponding to the second part of the claimed mini-boot code function) in Sun's mini-boot code may be, or could be said to constitute, a reason or advantage for the inventors of the present application having, or to have, endeavored to perfect the mini-boot code.

As mentioned above, other cited prior art references of record do not appear to disclose, among other things, a mini-boot code or similar code/program that has a function similar to the claimed

mini-boot code, and, accordingly, any combination of such prior art with Sun still does not disclose or suggest a mini-boot code that “comprises a configuration load program designed to access a configuration data” as claimed.

Each of independent Claim 26 and the new dependent claims is patentable over the cited prior art on the same rationale as discussed above, and further for the totality of features recited therein. For the foregoing reasons, accordingly, it is respectfully submitted that the claimed invention as encompassed by Claims 18-30 is patentable over the cited prior art.

Conclusion

In light of the above amendments and remarks, Applicants respectfully submit that Claims 18-30 in their current forms are in condition for allowance. Accordingly, reconsideration is respectfully requested.

Should the Examiner believe that a telephone conference with Applicants’ representative would be helpful to advance the prosecution of the application, or for any other reason, he or she is kindly invited to contact the undersigned with any questions.

The Commissioner is hereby authorized to charge any needed fees to deposit account 50-1600.

Respectfully submitted,



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